

CLAIMS

1. In combination:

- a container filled with a single portion of a substance, comprising
5 a preformed deformable body defining a filling cavity which body has
an opening and an integral planar circumferential rim surrounding
said opening, which opening is closed by a cover sheet which is
sealed to the circumferential rim by means of a circumferential
sealing seam, wherein the container is provided with identification
10 means corresponding to the substance contained in the container so as
to allow automatic identification of the container,
- a dispensing apparatus comprising receiving means for receiving the
container, which apparatus is adapted to open the container and
comprises identification recognition means for automatically
15 identifying the container and the substance therein.

2. Combination according to claim 1, wherein the dispensing apparatus
comprises compression means for compressing the container body and
wherein the sealing seam of the container on a predetermined location
20 has a weak spot such that the seal breaks at that weak spot upon
pressurizing the content of the container by compressing the
container body.

3. Combination according to any of the above claims, wherein the
25 receiving means of the dispensing apparatus have a compression
chamber with a variable volume for receiving the container body, a
stop face engaging the back side of the circumferential rim and a
covering lid with a supporting face for engaging the cover sheet of
the container.

30 4. Combination according to claim 3, wherein the covering lid is
provided with a recess arranged such that when the covering lid is
closed it is positioned over a part of the sealing seam, so as to
allow the cover of the container to bulge out into the recess upon
35 compression of the container body and the sealing seam to break.

5. Combination according to claims 1-4, wherein the receiving means
is adapted to receive containers with different body sizes.

6. Combination according to claims 1-5, wherein the receiving means is adapted to hold the circumferential rim of the container during dispensing of the substance.

5 7. Combination according to any of the preceding claims, wherein the receiving means are provided with ejection means for ejecting a container from the receiving means.

10 8. Combination according to claim 6, wherein the ejection means comprise one or more ejection rods, the ejection rods being movable with respect to the stop face towards a position wherein they project with respect to the stop face and engage the circumferential rim of the container.

15 9. Combination according to claim 8, wherein the ejection rods are stationary and the stop face is movable with respect to the ejection rods between a front position near the covering lid and a rear position distant from the covering lid.

20 10. Combination according to any of the claims 2-9, wherein the compression chamber is provided with a piston coupled to drive means, which piston is adapted to engage the container body.

25 11. Combination according to claim 10, wherein the drive means comprise a screw spindle and an electric motor.

12. Combination according to claim 10, wherein the drive means comprise pneumatic means.

30 13. Combination according to claim 10, wherein the drive means comprise hydraulic means.

14. Combination according to claim 10, wherein the drive means are adapted to be hand driven.

35 15. Combination according to any of the preceding claims, wherein the dispensing apparatus comprises treatment means for treating the substance dispensed from the container.

16. Combination according to claim 15, wherein the treatment means comprise liquid dispensing means for a liquid to be mixed with the substance from the container.

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17. Combination according to claim 16, wherein the liquid dispensing means for liquid comprise means for dispensing cooled water and/or hot water and/or water with ambient temperature.

10 18. Combination according to claim 16 or 17, wherein the dispensing means for liquid comprise means for dispensing carbonated water.

15 19. Combination according to claim 18, wherein the means for dispensing carbonated water comprise in combination a connecting arrangement for connecting a CO₂ bottle to the dispensing apparatus and a CO₂ bottle.

20 20. Combination according to claim 19, wherein the CO₂ bottle is provided with a closing valve and the connecting arrangement is provided with connecting means for opening the closing valve.

25 21. Combination according to claim 20, wherein the closing valve has a valve housing with a circumferential flange and the connecting means has engagement means for engaging said flange such that in a connected state a rotation of the valve housing with respect to the connecting means is prevented.

30 22. Combination according to any of the preceding claims, wherein the dispensing apparatus has dispensing means for different sorts of water, e.g. hot water, cooled water and carbonated water, which are positioned such that the different sorts of water can be dispensed at one point in a serving container like e.g. a cup or a bottle.

35 23. Combination according to any of the preceding claims, wherein the identification means are applied to the cover sheet of the container.

24. Combination according to any of the preceding claims, wherein the identification means are applied to the preformed deformable body.

25. Combination according to claim 23 or 25, wherein the identification means are visual identification means, for example a bar code.

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26. Combination according to claim 23 or 24, wherein the identification means comprise electronic identification means.

10 27. Combination according to claim 26, wherein the electronic identification means comprise a resonance circuit.

28. Combination according to claim 28, wherein the electronic identification means comprise a transponder.

15 29. Combination according to any of the preceding claims, wherein the identification recognition means comprise optical scanning means which are arranged in the receiving means of the dispensing apparatus such that the bottom surface of a container can be scanned.

20 30. Combination according to claim 29, wherein the optical scanning means comprise a laser scanner.

31. Combination according to any of the preceding claims, wherein the cover sheet is made of foil material.

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32. Combination according to any of the preceding claims, wherein the cover sheet comprises a multilayer material.

30 33. Container for containing a substance, comprising a preformed deformable body defining a filling cavity which body has an opening and an integral planar circumferential rim surrounding said opening, which opening is closed by a cover sheet which is sealed to the circumferential rim by means of a circumferential sealing seam, wherein the circumferential rim has a dispensing part with a
35 dispensing channel formed in it by a depression which is covered by the cover sheet, the dispensing channel being closed off from the filling cavity by the circumferential sealing seam.

34. Container according to claim 33, wherein the circumferential sealing seam at the location between the channel and the filling cavity is weakened, e.g. by a decreased seam width, such that upon pressurizing the content of the container by compressing the container body the seal breaks at that location and a passage is formed between the cover sheet and dispensing part of the rim so as to allow substance to pass through the passage from the cavity into the channel.

35. Container according to claim 33 or 34, wherein the dispensing part of the rim comprises an extending tab in which the dispensing channel is formed.

36. Container according to claim 35, wherein the channel has an end at the edge of the extending tab.

37. Container according to claim 36, wherein the end at the edge of the extending tab is open.

38. Container according to claim 36, wherein the end of the channel at the edge of the extending tab is sealed.

39. Container for containing a substance, comprising a preformed deformable body defining a filling cavity which body has an opening and an integral planar circumferential rim surrounding said opening, which opening is closed by a cover sheet which is sealed to the circumferential rim by means of a circumferential sealing seam, wherein the circumferential rim has a flat dispensing part which is covered by the cover sheet, which cover sheet is sealed to the dispensing part by at least two outwardly directed sealing seams which extend at a distance from one another from the circumferential sealing seam to the edge of the dispensing part.

40. Container according to claim 39, wherein the circumferential sealing seam at the location between the two outwardly directed sealing seams has a weakened portion, e.g. by a decreased seam width, such that upon pressurizing the content of the container by exerting a compression force on the wall the seal breaks at that location and

a dispensing passage is formed between the two outwardly directed sealing seams, the cover sheet and the surface of the dispensing part.

5 41. Container according to claim 40, wherein the weakened portion of the circumferential sealing seam at the location between the two outwardly directed sealing seams has a pointed portion of which the point is directed towards the filling cavity such that upon
10 compression of the container the seal starts to break at the pointed portion.

42. Container according to any of the claims 39-41, wherein the outwardly directed sealing seams are substantially parallel.

15 43. Container according to any of the claims 39-42, wherein the dispensing part is shaped as an extending tab.

44. Container according to any of the claims 39-43, wherein the dispensing part has a part near its edge with a decreasing thickness
20 towards the edge.

45. Container according to claim 44, wherein the thickness of the dispensing part at the edge is substantially equal to the thickness of the cover sheet.

25 46. Container according to any of the claims 33-45, wherein a gripping tab is provided at the circumferential rim.

47. Container according to claim 46, wherein the gripping tab is
30 situated diametrically opposite the extending tab.

48. Container according to any of the claims 33-47, wherein the container wall is formed of a plastic material, preferably polystyrene.

35 49. Container according to any of the claims 33-47, wherein the container wall is formed of a metal.

50. Container according to any of the claims 33-49, wherein the cover sheet is made of foil material.

51. Container according to any of the claims 33-50, wherein the cover
5 sheet is made of a multilayer material.

52. Container according to any of the claims 33-49, wherein the cover sheet is preformed.

10 53. Container according to any of the claims 33-52, wherein the container body is formed by vacuum forming and/or thermo forming.

54. Container according to any of the claims 33-53, wherein the deformable body comprises a bottom and a side wall extending upwardly
15 from the bottom.

55. Container according to claim 33-54, wherein the container body is corrugated so as to facilitate compression of the container.

20 56. Container according to claim 33-55, wherein the circumferential rim is provided with one or more positioning protrusions formed by a depression in the rim.

57. Container for containing a substance, comprising a deformable
25 body defining a filling cavity, the body comprising two preformed body shells each defining a part of the filling cavity, each body shell having an integral planar circumferential rim at the edge of the shell, wherein the circumferential rims of the shells are attached to one another with a sealing seam, wherein the sealed
30 together circumferential rims at a portion of the circumference form a dispensing part with a dispensing channel, the dispensing channel being closed off from the filling cavity by a sealing seam.

58. Container for containing a substance, comprising a deformable
35 body defining a filling cavity, the body comprising two preformed body shells each defining a part of the filling cavity, each body shell having an integral planar circumferential rim at the edge of the shell, wherein the circumferential rims of the shells are

attached to one another with a sealing seam so as to form a circumferential rim of the container, wherein the circumferential rims at a portion of the circumference each have a dispensing part half, wherein the dispensing part halves are sealed together by at least two outwardly directed sealing seams which extend at a distance from one another from the circumferential sealing seam to the edge of the dispensing part.

59. Method for manufacturing containers according to one of the claims 33-56, wherein
- a flat sheet is placed in a vacuum or thermo forming apparatus with a forming die, and multiple container bodies are formed simultaneously in the sheet by vacuum forming the filling cavities into the die,
 - the sheet with the filling cavity is placed in a filling machine and filled with substance,
 - a covering sheet is sealed over the sheet with the container bodies,
 - the sheet with the closed containers is placed in a punch machine, where the perimeter of the circumferential rim of the body is formed by punching out waste material between the containers.

60. Method according to claim 59, wherein in the vacuum or thermo forming machine also dispensing channels of the containers are depressed in an extension tab which is subsequently to be formed in the punch machine.

61. Method according to claim 59 or 60, wherein by the vacuum or thermo forming machine positioning protrusions are depressed in the circumferential rim, which is subsequently to be formed in the punch machine.

62. Method according to any of the claims 59-61, wherein the cover sheet is manufactured from foil material.

63. Method according to any of the claims 59-62 wherein the cover sheet is manufactured with identification means.

64. Method according to any of the claims 59-63, wherein identification means are applied to the container bodies by in-mold labeling in the vacuum or thermo forming apparatus.

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65. Method according to any of the claims 59-63, wherein the identification means are printed on the container bodies directly after filling and sealing them.

10 66. Method for opening a container containing a substance, comprising a deformable body (made of sheet material) defining a filling cavity which body has an opening and an integral planar circumferential rim surrounding said opening, which opening is closed by a cover sheet which is sealed to the circumferential rim by means of a
15 circumferential sealing seam,
the method comprising the steps of:
- holding the container,
- engaging the cover sheet with a support surface provided with a recess and adapted to support the cover sheet except at the position
20 of the recess, wherein the recess is positioned at least over a part of the circumferential sealing seam,
- compressing the container body whereby the substance is pressurized and the cover sheet bulges out into the recess such that the sealing seam is broken at the location where the bulge is formed resulting in
25 the container being open.

67. Method for opening a container containing a substance, comprising a deformable body (made of sheet material) defining a filling cavity which body has an opening and an integral planar circumferential rim
30 surrounding said opening, which opening is closed by a cover sheet which is sealed to the circumferential rim by means of a circumferential sealing seam,
the method comprising the steps of:
- holding the container,
35 - engaging the cover sheet with a support surface provided with a recess and adapted to support the cover sheet except at the position of the recess, wherein the recess is positioned over at least a part of the circumferential sealing seam,

- heating the sealing seam at a position facing the recess, whereby the sealing seam is locally weakened,
- compressing the container body whereby the substance is pressurized and the cover sheet bulges out into the recess such that the sealing seam is broken at the location where the bulge is formed resulting in the container being open.

68. Method for preparation of a drink, wherein

- a flat sheet is placed in a vacuum or thermo forming apparatus with a forming die, and multiple container bodies are formed simultaneously in the sheet by vacuum or thermo forming the filling cavities into the die,

- the sheet with the filling cavity is placed in a filling machine and filled with substance,

- a sheet of covering material is sealed over the sheet with the container bodies,

- the sheet with the closed containers is placed in a punch machine, where the perimeter of the circumferential rim of the body is formed by punching out waste material between the containers,

- the container is placed in a drink dispensing apparatus comprising receiving means for receiving and holding the container,

- the cover sheet is engaged with a support surface provided with a recess and adapted to support the cover sheet except at the position of the recess, wherein the recess is positioned at least over a part of the circumferential sealing seam,

- the container is identified by the dispensing apparatus such that the apparatus knows which substance is contained in the container,

- a serving container is placed in the drink dispensing apparatus

- the container body is compressed by the dispensing apparatus

- whereby the substance is pressurized and the cover sheet bulges out into the recess such that the sealing seam is broken at the location where the bulge is formed resulting in the container being open,

- the substance is dispensed out of the container directly into the serving container,

- mixing fluid, in particular water, is dispensed by the drink dispensing apparatus into the serving container and mixed with the substance resulting in a servable drink,

- the container is removed from the dispensing apparatus.

69. Serving bottle for use with the combination according to any of the claims 1-32.

5 70. CO₂ bottle for use in a combination according to claim 19.